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		RLLALETLIQNQQLLNLWGCKGRLVCYTSVKWN	Majority
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SEQ ID NO:1	1	RLLALETLLQNQQLLSLWGCKGKLVCYTSVKWN	ANT70
SEQ ID NO:2	1	RLQALETLIQNQQRLNLWGCKGKLICYTSVKWN	MVP5180
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SEQ ID NO:4	1	RLLALETLIQNQQLLNLWGCKGRLVCYTSVKWN	BCF09
SEQ ID NO:5	1	RLLALETLIQNQQLLNLWGCKGRLICYTSVKWN	BCF12
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SEQ ID NO:8	1	RLLALETLIQNQQLLNLWGCKGRLICYTSVQWN	686
SEQ ID NO:9	1	RLLALETLMQNQQLLNLWGCKGRILCYTSVKWN	1515
SEQ ID NO:10	1	RLLALETLIQNQQLLNLWGCKGRIVCYTSVRWN	1516
SEQ ID NO:11	1	RLLALETLIQNQQLLNLWGCKGKIVCYTSVEWN	193Ha
SEQ ID NO:12	1	RLLALETLMQNQQLLNLWGCKGKLICYTSVRWN	ABT063
SEQ ID NO:13	1	RLQALETLIQNQQRLDLWGCKGRIICYTSVKWN	ABT1123
SEQ ID NO:14	1	RLLALETFIQNQQLLNLWGCKGRLICYTSVKWN	ABT124
SEQ ID NO:15	1	RLLALETLIQNQQLLNLWGCKGRLVCYTSVKWN	ABT2156
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SEQ ID NO:19	1	RLLALETLMQNQQLLNLWGCRGKAICYTSVQWN	DUR
SEQ ID NO:20	1	RLQALETLIQNQQLLSLWGCKGRLVCYTSVKWH	POC
SEQ ID NO:21	1	RLLALETLIQNQQLLNLWGCKGRLLCYTSVKWN	FAN
SEQ ID NO:22	1	RLLALETFIQNQQLLNLWGCKGKLICYTSVEWN	HCYT2c.
SEQ ID NO:23	1	RLQALETLMQNQQRLDLWGCKGRLICYTSVKWN	HLD28
SEQ ID NO:24	1	RLQALEPLIQNQQRLSLWGCKGRIICYTSAKWN	LOB
SEQ ID NO:25	1	RLLALETLIQNQQLLNSWGCKGRLVCYTSVKWN	MAN
SEQ ID NO:26	1	RLVALETLVQNQQLLNLWGCKGRLTCYTSVKWN	NAN
SEQ ID NO:27	1	RLLALETLIQNQQLLNLWGCKGRLLCYTSVKWN	NKO
SEQ ID NO:28	1	RLLALETFIQNQQLLNLWGCKGQLVCYTSVKWN	Nr42
SEQ ID NO:29	1	RLLALETFIQNQQLLNLWGCKGRLICYTSVKWN	PE41
SEQ ID NO:30	1	RLLALETLIQNQQLLNSWGCKGRIVCYTSVKWN	ESS

Figure 1. Alignment of HIV-1 group O immunodominant region amino acid sequences

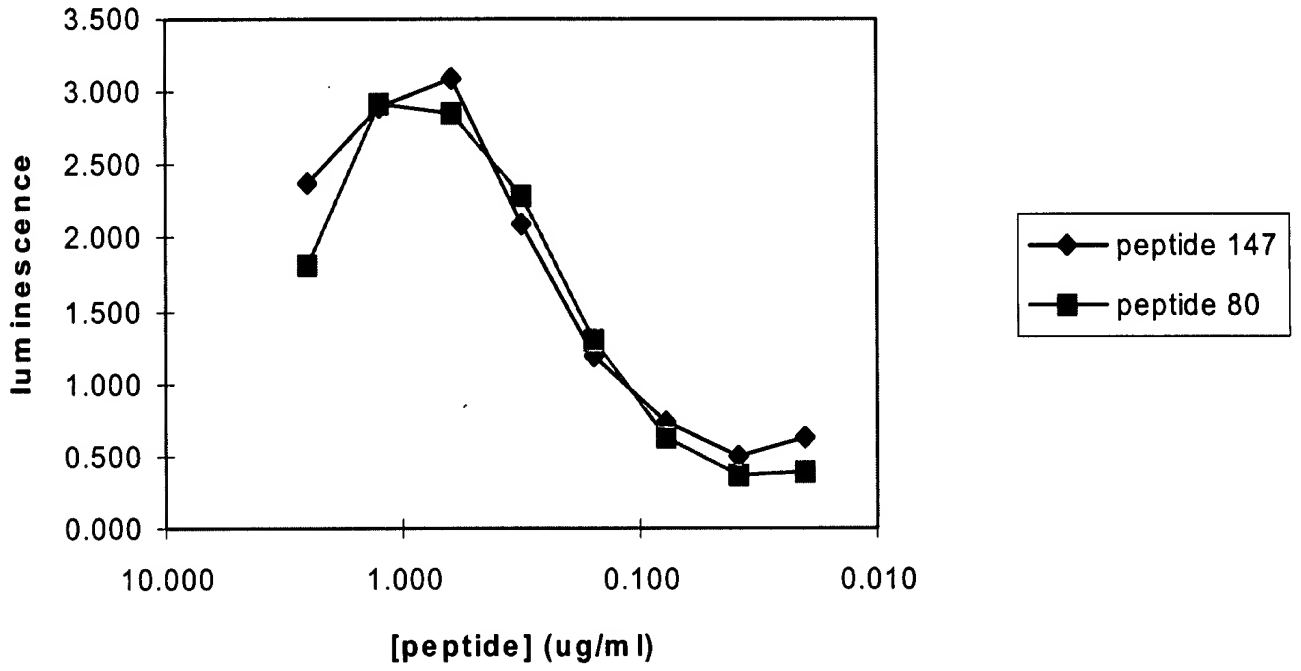


Figure 2. Recognition of peptides 147 and 80 by an HIV-1 group O sample.

SEQ ID NO:70

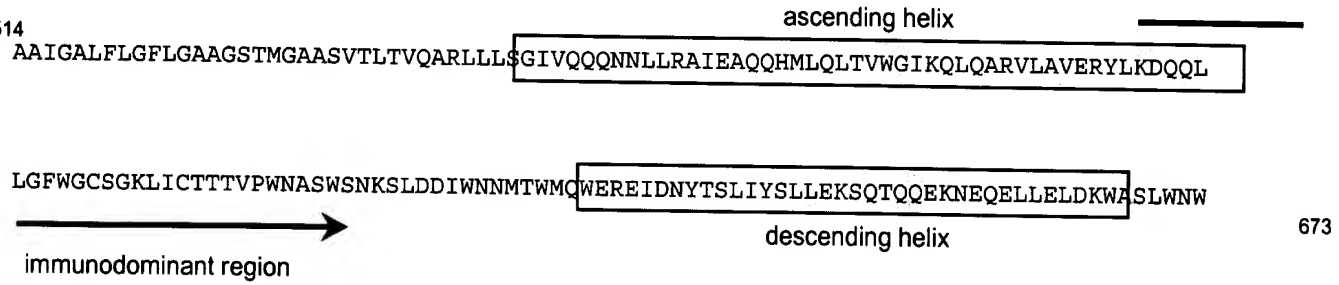
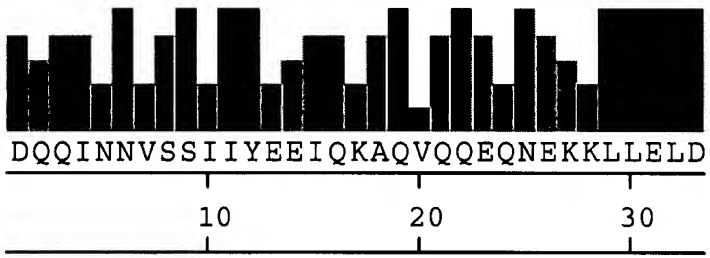


Figure 3. Ectodomain of gp41 (MN isolate)



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SEQ ID NO:32	1	DRQISNISSTIYEEIQKAQVQQEQNEKKLLELD	ANT70
SEQ ID NO:33	1	DQHINNVSSIIYDEIQAAQDQQEKNVKALLELD	MVP5180
SEQ ID NO:34	1	DQQINNVSSFIYEKIQEAQEQQEKNEKELLELD	VAU
SEQ ID NO:35	1	DQQIDNISSTIYDEIQKAQVQQEQNEQKLLELD	686
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SEQ ID NO:38	1	DQQVNNVSSFIYDKIQEAQEQQEENERALLELD	CDC7755
SEQ ID NO:39	1	DQQISNVSSIIYEEIQKAQEQQEQNEKKLLELD	D47-2d
SEQ ID NO:40	1	DQQIANVSSFIYDQIQEAQERQDKNEKTLLELD	DUR
SEQ ID NO:41	1	DQQIDNVSSTIYEEILKAQIQQEQNEKKLLELD	ESS
SEQ ID NO:42	1	DREIDNISSYIYEKIQEAQDQQENNERELLELD	HCYT2c
SEQ ID NO:43	1	DKQISNISSIIYDEIQTAQDQQERNVKALLELD	HLD28
SEQ ID NO:44	1	DQQVNNVSSIIYEEIQRAQVQQEQNEKRLLELD	Nr42
SEQ ID NO:45	1	DQQIDNVSSIIYEEIQKAQGQQEQNEKKLLELD	PE41

Figure 4. Alignment of MN (type B) and group O gp41 sequences in the region of the descending helix

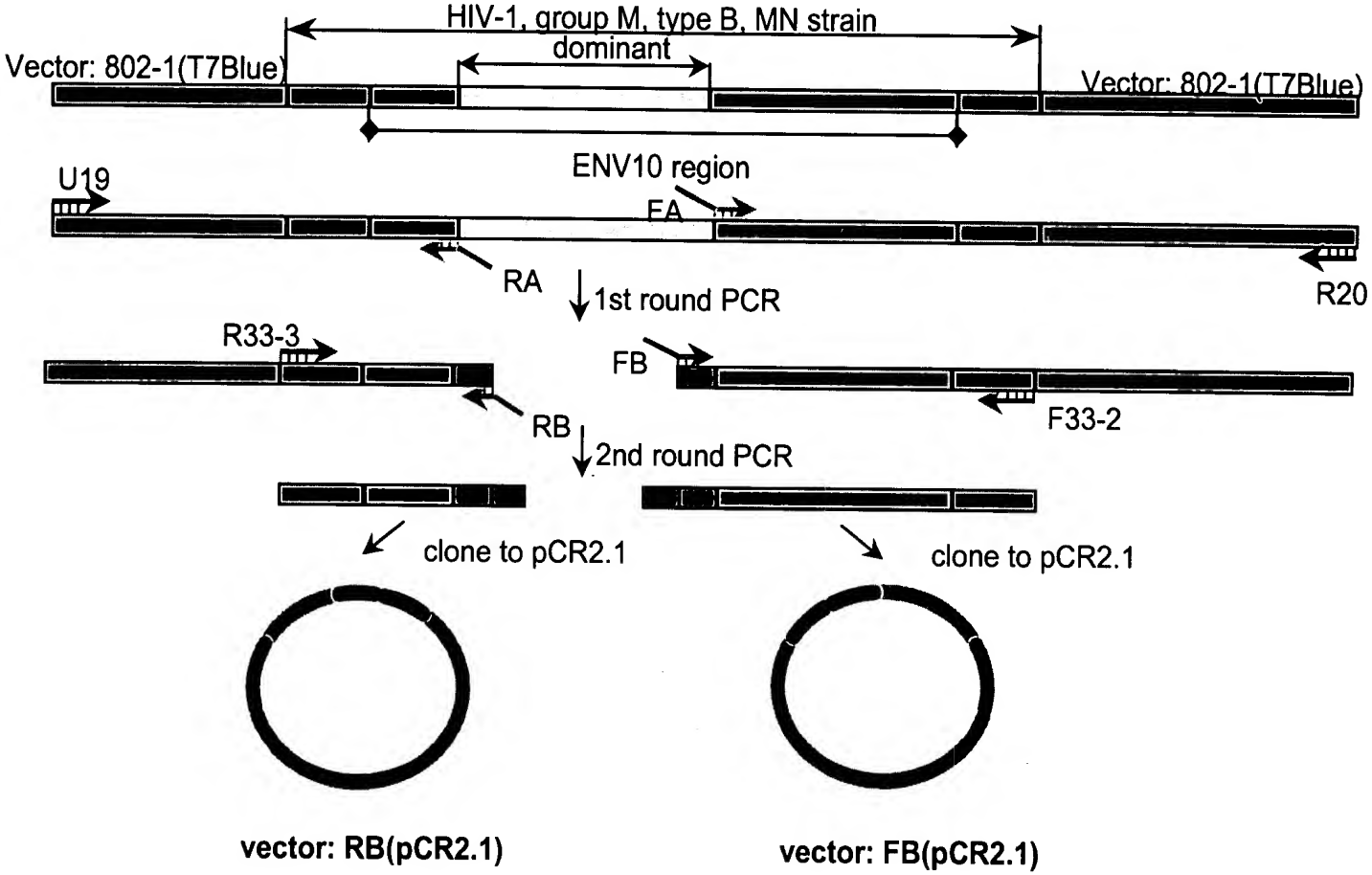
HIV-1, group M, type B, MN strain
dominant
Vector: 802-1(T7Blue)
Vector: 802-1(T7Blue)
ENV10 region
U19
EA
RA
1st round PCR
R20
R33-3
FB
RB
F33-2
2nd round PCR
clone to pCR2.1
clone to pCR2.1
vector: RB(pCR2.1)
vector: FB(pCR2.1)

Figure 5a.

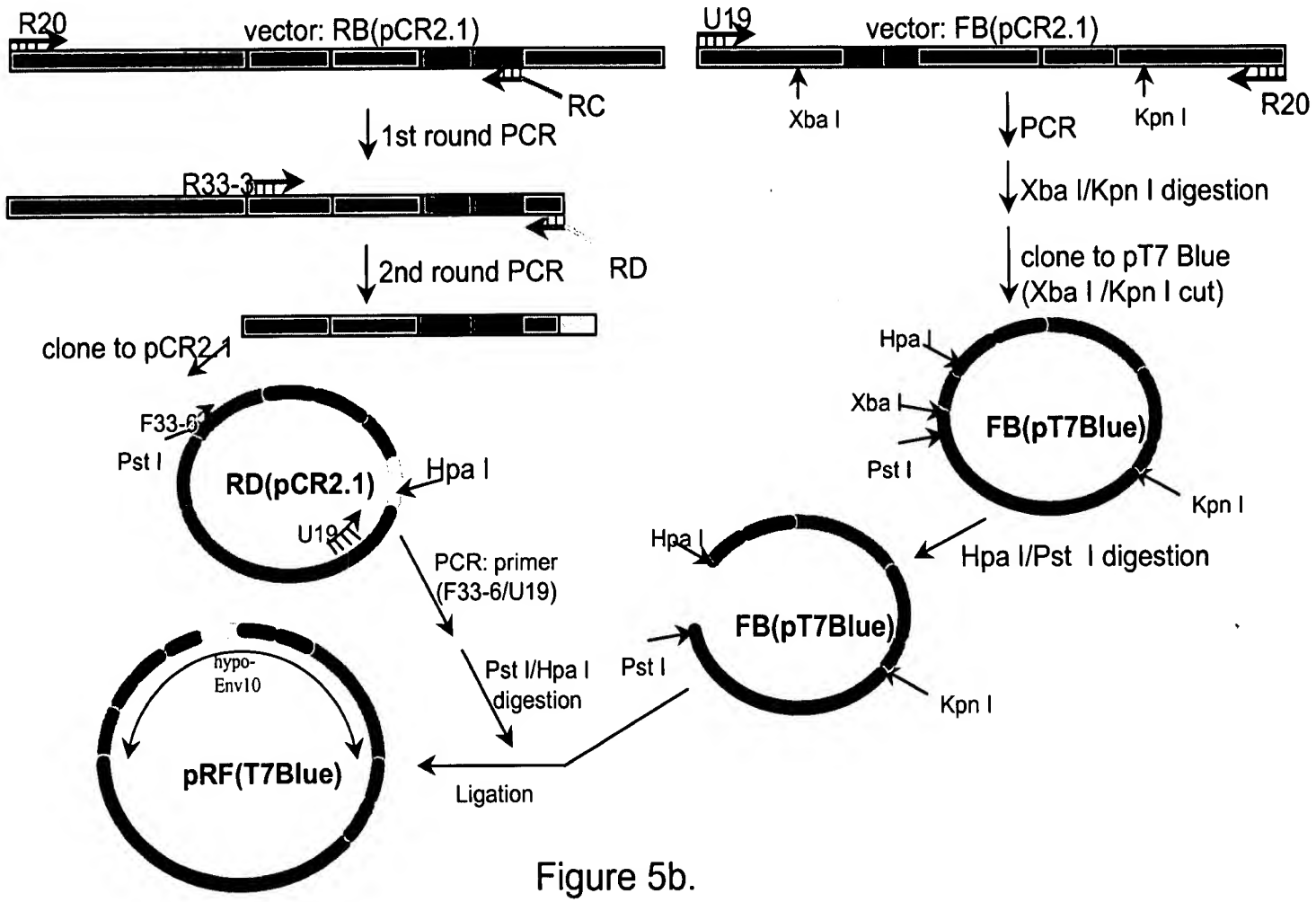
R20
vector: RB(pCR2.1)
RC
1st round PCR
R33-3
2nd round PCR
RD
clone to pCR2.1
F33-6
Pst I
RD(pCR2.1)
Hpa I
U19
PCR: primer
(F33-6/U19)
hypo-
Env10
pRF(T7Blue)
Pst I/Hpa I
digestion
Ligation
U19
vector: FB(pCR2.1)
Xba I
PCR
Kpn I
R20
Xba I/Kpn I digestion
clone to pT7 Blue
(Xba I /Kpn I cut)
Hpa I
Xba I
Pst I
FB(pT7Blue)
Kpn I
Hpa I/Pst I digestion
Hpa I
FB(pT7Blue)
Pst I
Kpn I

Figure 5b.

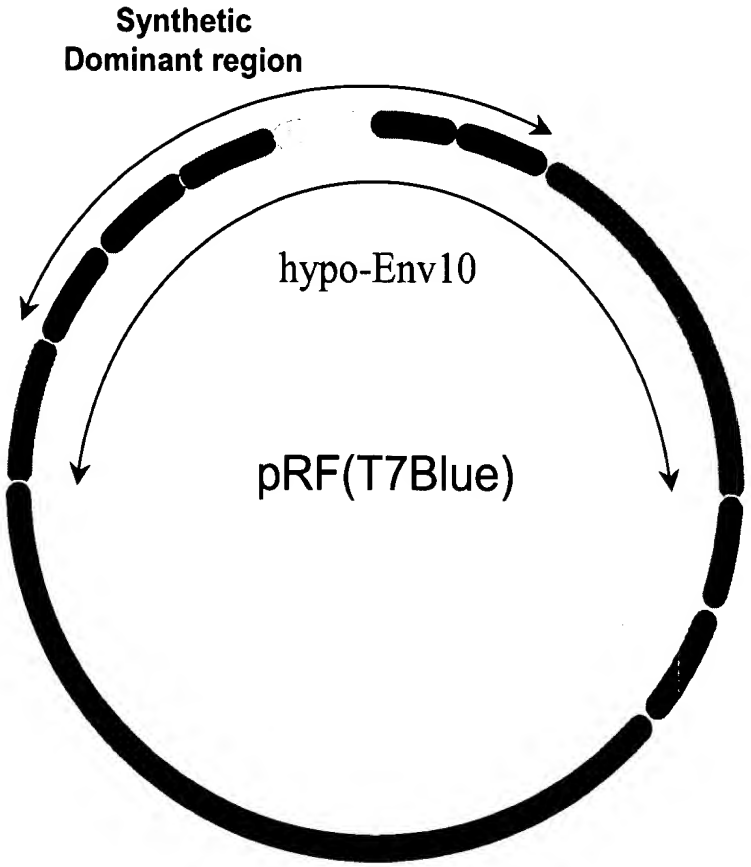

Figure 5c.

Primers used in the experiment:

SEQ ID NO:46	FA:	5′-ATTTTGGAAGCCCAGGATCAACAAGAGGAGAACGTTCGTGAGTTGCTGGAGCTAGATAAATGG
SEQ ID NO:47	FB:	5′-AGCAAGTTAACAATGTTTCTTCTATTATTTATGATAAGATTTTGGAAGCCCAGGATCA
SEQ ID NO:48	RA:	5′-CAAGAATTCAGACGCTGTTGGTTTTGCATCAGAGTCTCCAGAGCCTGTAGGCGAGCTCGGAGCTG
SEQ ID NO:49	RB:	5′-GGGCACTAGTATAACAAATAATACGACCCTTACAACCCCAAGAATTCAGACGCTGT
SEQ ID NO:50	RC:	5′-CCAGATATCCTCCAGAGACTTATTAGACCAAGAAGCATGCCAACGGGCACTAGTATAACAAA
SEQ ID NO:51	RD:	5′-ACATTGTTAACTTGCTGGTCCCATTGCATCCAGGTCATGTTATCCCAGATATCCTCCAGAGA
SEQ ID NO:52	U19:	5′-GTTTTCCCAGTCACGACGT
SEQ ID NO:53	R20:	5′-CAGCTATGACCATGATTACG
SEQ ID NO:54	R33-3:	5′-ACCGGAATTCCGATTTCCTTGGGTT
SEQ ID NO:55	F33-2:	5′-CATAAAGCTTGTCCCAGAAGTTCC
SEQ ID NO:56	F33-6:	5′-GCCACTGCAGCCAGACTATTATTGTC

Figure 5d. Nucleotide sequences of the primers used in Figures a - c.

SEQ ID NO:57

DHFR

MRGSGIMVRPLNSIVAVSQNMGIGKNGDLPWPPLRNEFKYFQRMTTTSSVEGKQNLVIMGRKTWFSIPEKNRPLKDRINI

VLSRELKEPPRGAHFLAKSLDDALRLIEQPELASKVDMVWIVGGSSVYQEAMNQPGHLRLFVTRIMQEFESDTFFPEIDL

GKYKLLPEYPGVLSEVQEEKGIKYKFEVYEKKGSRSARLLLSGIVQQQNNLLRAIEAQQHMLQLTAWGIKQLRARLQALE

TLMQNQQRLNSWGCKGRIICYTSARWHASWSNKSLEDIWDNMTWMQWDQQVNNVSSIIYDKILEAQDQQEENVRELLELD

group O group O

KWASLWNWFDITNWLWYIKIFIMIVGGLVGLRIVFAVLSIVNRVRQGYSPLSLQTRPPVPRGPDRPEGIEEEGGERDRDT

SGRLVHGFLAIIWVDLGPEQKLISEEDLNSAVDHHHHHH

myc $(His)_6$

Figure 6a. Amino acid sequence of DHFR-hENV-MH

SEQ ID NO:58

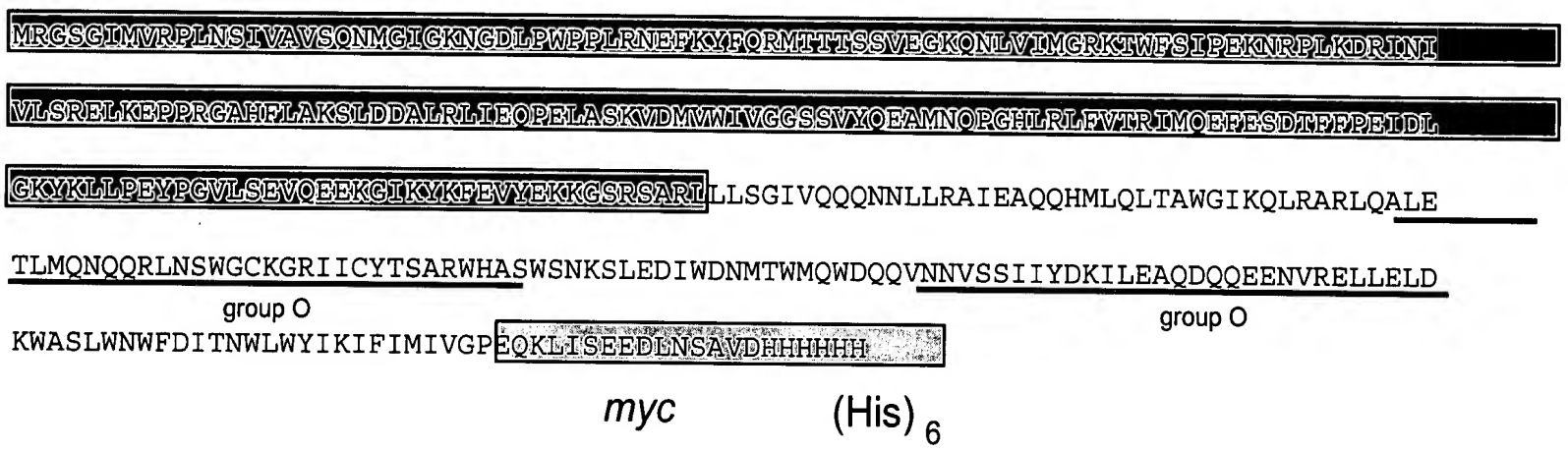

Figure 6b. Sequence of DHFR-hES-MH